

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended) ~~An artificial tissue~~ An implant system, comprising:

(a) an implantable device comprising a sensor,

(b) a biological matrix in ~~configured for~~ contact with an outer surface of the ~~an~~ implantable device and with a biological system, and

(c) ~~(b)~~ a plurality of cells supported by said biological matrix, ~~at least a portion of said cells~~ extending the functional lifespan of the sensor by promoting a biological interaction between the implantable device and the biological system around a portion of the implantable device, ~~being configured to enhance the lifespan of said implantable device when said device is implanted in the biological system.~~

Claim 2 (Currently Amended) The implant ~~artificial tissue~~ system of claim 1, wherein said cells include at least one member selected from the group consisting of biological cells, engineered cells, support cells, stem cells, artificial cells and hybrid cells.

Claim 3 (Previously Canceled)

Claim 4 (Canceled)

Claims 5-8 (Previously Canceled)

Claim 9 (Currently Amended) The implant ~~artificial tissue~~ system of claim 1, wherein said biological system is a mammal.

Claims 10-13 (Previously Canceled)

Claim 14 (Currently Amended) The implant ~~artificial-tissue~~ system of claim 1, wherein said ~~implantable device is a sensor~~ is an amperometric glucose sensor.

Claim 15 (Currently Amended) The implant ~~artificial-tissue~~ system of claim 14 1, wherein said sensor is a glucose sensor.

Claim 16 (Currently Amended) The implant ~~artificial-tissue~~ system of claim 1, wherein said biological matrix ~~is configured to~~ at least partially embeds embed said implantable device.

Claims 17-18 (Previously Canceled)

Claim 19 (Currently Amended) The implant ~~artificial-tissue~~ system of claim 1, wherein the matrix additionally supports ~~said~~ cells that are configured to suppress deleterious reactions between said implantable device and said biological system and/or said biological matrix ~~artificial-tissue system~~.

Claims 20-24 (Previously Canceled)

Claim 25 (Currently Amended) The implant ~~artificial-tissue~~ system of claim 1, wherein said system further comprises a support system and/or a delivery system comprising a gel, a paste and/or a polymer.

Claim 26 (Previously Canceled)

Claim 27 (Canceled)

Claim 28 (Currently Amended) An implant system comprising:
(a) an implantable device comprising a sensor, and

(b) a biological matrix in contact with an outer surface of said implantable device, and a plurality of cells supported by said biological matrix, said cells extending the functional lifespan of sensor ~~being configured to enhance the lifespan of said implantable device~~ when said device is implanted in a biological system.

Claims 29-36 (Previously Canceled)

Claim 37 (Currently Amended) An artificial implant system in biological contact with a biological system comprising:

- (a) a cellular component, said cellular component includes at least one cellular community which induces a biological response in the biological system;
- (b) a biological matrix material comprising a cell culture derived basement membrane in contact with the biological system, said biological matrix material being associated with a portion of the cellular community; and
- (c) an implant device comprising a sensor and having an outer surface in contact with the biological matrix material, at least one of the biological matrix material and the cellular community extending the functional lifespan of the sensor ~~increasing the lifespan of the implant device~~.

Claim 38 (Currently Amended) The artificial implant system in biological contact with a biological system of claim 37, wherein the lifespan of the implant device is extended ~~increased by promoting~~ ~~inducing~~ neovascularization of the biological system.

Claim 39 (Currently Amended) The artificial implant system in biological contact with a biological system of claim 37, wherein the biological system is a mammal.

Claims 40-50 (Previously Canceled)

Claim 51 (Currently Amended) The implant ~~artificial tissue~~ system of claim 1, wherein the biological matrix comprises a basement membrane.

Claim 52 (Previously Presented) The implant system of claim 28, wherein the biological matrix comprises a basement membrane.

Claim 53-58 (Previously Canceled)

Claim 59 (Currently Amended) The artificial implant system of claim 37, wherein the cellular component comprises a cellular community that inhibits promotion of biocompatibility includes inhibition of at least one of inflammation and fibrosis.

Claims 60-65 (Previously Canceled)

Claim 66 (Currently Amended) The implant system of claim 1, wherein the system is configured to test the effectiveness of an implantable device.

Claim 67 (Previously Canceled)

Claim 68 (Currently Amended) The implant system of claim 28, wherein the implantable device comprises a glucose sensor.

Claim 69 (Previously Presented) The implant system of claim 68, wherein the biological matrix comprises a basement membrane.

Claim 70 (Currently Amended) The implant ~~artificial-tissue~~ system of claim 4 ~~28~~, wherein said cells induce the growth of biological tissue in said biological system and/or between said biological system and/or said implantable device ~~artificial-tissue system~~.

Claim 71 (Currently Amended) The implant ~~artificial-tissue~~ system of claim 70, wherein said biological tissue comprises vascular structures.

Claim 72 (Currently Amended) The implant ~~artificial-tissue~~ system of claim 4 28, wherein said implant ~~artificial-tissue~~ system further comprises at least one genetic element supported by said matrix.

Claim 73 (Currently Amended) The implant ~~artificial-tissue~~ system of claim 4 28, wherein said ~~artificial-tissue~~ system further comprises at least one response modifier supported by said matrix.

Claim 74 (Currently Amended) The ~~artificial~~ implant system in biological contact with a biological system of claim 39, wherein the functional lifespan of the sensor ~~implant~~ device is extended ~~increased~~ by induced ~~inducing~~ neovascularization of the biological system.

Claim 75 (Currently Amended) The ~~artificial~~ implant system in biological contact with a biological system of claim 37 ~~54~~, wherein the cellular component includes at least one member selected from the group consisting of normal vascular stem cells; a combination of normal vascular stem cells and engineered support cells; and a combination of normal vascular stem cells and engineered stem cells.

Claim 76 (Currently Amended) The ~~artificial~~ implant system in biological contact with a biological system of claim 75, wherein the basement membrane has at least one of cytokines and growth factors bound thereto.

Claim 77 (Currently Amended) The ~~artificial~~ implant system in biological contact with a biological system of claim 37, wherein at least a portion of the cellular community is bound to the biological matrix.

Claim 78 (Previously Presented) An implant system comprising an implantable device including a sensor and a biological matrix comprising a cell culture derived basement membrane in contact with an outer surface of said implantable device and

with a biological system, said basement membrane extending the functional lifespan of the sensor ~~enhancing the lifespan of said implantable device~~ when said device is implanted in a biological system.

Claim 79 (New) The implant system of claim 78, wherein the biological system is a mammal.

Claim 80 (New) The implant system of claim 78, wherein the sensor is a glucose sensor.

Claim 81 (New) The implant system of claim 78, wherein the sensor is an amperometric sensor.

Claim 82 (New) The implant system of claim 78, wherein the biological matrix at least partially embeds the implantable device.

Claim 83 (New) The implant system of claim 78, wherein the functional lifespan of the sensor is extended by suppressing at least one of inflammation and fibrosis of the biological system.

Claim 84 (New) The implant system of claim 78, wherein the system is configured to test the effectiveness of an implantable device.

Claim 85 (New) The implant system of claim 78, wherein the basement membrane has at least one of cytokines and growth factors bound thereto.

Claim 86 (New) The implant system of claim 70, wherein the biological tissue comprises capillaries.